

heads. We sometimes find in our manufacture of wrought-iron girders that by accident an indifferent piece of rivet iron gets used, and in the cooling of the rivet the head will fly off. Wrought-iron girders in particular positions are good, and cast iron in others equally good, and as much to be depended upon, when scientifically used, as any other material; but let us not raise unnecessary alarms, and fly from one extreme to the other, and thus cause fireproof buildings to be discontinued, or by our foolish fears put such a cost upon the construction that it will materially check the course of their erection.

HENRY GRISSELL.

We are induced to solicit space for a few remarks in reference to the late lamentable accident in Gracechurch-street, more particularly as we find that your correspondents offer opinions upon the subject, founded entirely upon erroneous data, and calculated to convey impressions injurious to our system of fire-proof construction for floors and roofs, which was employed at this building. We consider it due to the profession at large, and to the public generally, that they should know whether or not this system is in any degree answerable for the accident; because, if the affirmative can be proved, and that its introduction involves danger to a single human life, it is the duty of every man to discountenance it; while, on the other hand, if the negative is established, it is neither just nor reasonable that the system should be condemned, simply because it happened to be adopted in a building, a portion of which has fallen down.

It is admitted that the accident originated with the failure of one of the staircase girders; and it is in evidence (vide that of Mr. Bell, as reported in the *Morning Chronicle* and the *Daily News*, but not in the *Times* or *The Builder*), that "Fox and Barrett had nothing to do with the girders of the staircase."

We consider the omission of these few words in the report of the inquest to have very materially affected our position in reference to this unfortunate affair, because in numerous instances in which we have pointed them out to those who had read only the *Times*' report, the remark has at once been made that we were evidently wholly exonerated, which was not the previous impression of the public.

It was with the floors and roof of the building that we were concerned, and in furnishing the details for these, proof weights were given for every thing: the whole of them were submitted to the required test, and as some of these were proved, by experiment, up to their breaking weight, an opportunity was afforded of ascertaining their ultimate strength, which was far from being in any way derogatory of the quality of the metal employed, viz., Scotch iron.

As to the general question of the introduction of iron into buildings, it is surely out of place. The full investigation the subject has received from the hands of the highest authorities, to raise any doubt upon the point: its value as a material for construction is all but universally admitted, while its use has been sanctioned in every building of any importance erected during the present century. It is the abuse of this material only that is to be guarded against. With the most ordinary precaution the risk of accident is very small even with girders which are exposed; but with the light joists used in our system, first tested to a degree far exceeding their load, and then placed at short distances apart, and embedded in concrete, which soon becomes nearly the solidity of stone, accident is impossible—the iron being protected by its complete encasement, and the strength of the concrete being added to that of the joists—already proved to be in excess; but should any objection be raised to the use of cast-iron, it can be met by substituting rolled iron for the joists, at very little, if any, additional cost.

FOX AND BARRETT.

ST. PANCRAS ALMSHOUSES.—It has been proposed to establish, in the wealthy and populous parish of St. Pancras, almshouses for about 100 parishioners, who have attained the age of 70 years, have never received parochial relief, have borne good characters, and have been overtaken by misfortune and adversity. The building will be commenced as soon as £20,000 shall have been subscribed; and of this amount nearly one-half has been received. A ladies' committee has also been formed for aiding a wing for widows and single women of the parish. The proposition is warmly supported by the parochial clergy and influential residents.

#### SMEATONIAN SOCIETY OF CIVIL ENGINEERS.

THIS Society was founded in 1771 by Mr. Smeaton, for the purpose of encouraging civil engineers, and introducing, through social meetings, a friendly intercourse among the profession and men of science. Jessop, Whitworth, Watt, Rennie, Mylne, Gellbourn, Huddart, and Chapman, were amongst the most eminent of the first class: Banks, Evelyn, Boulton, Prestly, and Hutton, of the other.

We owe to this society the publication of the valuable reports of Smeaton, which having been purchased, with other papers, by Sir Joseph Banks, were liberally given up by him, and were edited by a special committee.

The members of this Society entertained, on Friday evening last, a distinguished party of foreigners and English scientific men at the Freemasons' Tavern, Lincoln's-inn-fields. Among those present were General Poncelet, Col. Morin, Baron C. Dupin, Baron Séguier, Mr. M. Mathieu, M. Payen, M. Combes, M. Quételet, of Belgium; Chevalier Conrad, of Holland; Professor Wedding, of Prussia; Chevalier de Burg, of Austria; Professor Colladon, of Switzerland; Professor Corridi, of Tuscany; Luigi de Cristoforo, of Lombardy; Count A. E. Rosen, of Sweden; Colonel Schwabe and Capt. Lisiansky, of Russia; Mr. Hayward, Dr. Smith, and Mr. S. Webber, of America; Earl of Lovelace, Sir John Herschell, Sir David Brewster, Sir Roderick Murchison, Professor Willis, Professor Wheatstone, Mr. T. B. Pentland. As honorary members of the Society there were the Astronomer Royal, Rev. W. Whewell, Mr. C. Babbage, Dr. Roget, Mr. C. H. Turner, &c. &c.

M. Gourlier, of Paris, the Duke of Buccleuch, Lord Brougham, Lord Rosse, Lord Wrottesley, the Dean of Ely, Colonel Sabine, Capt. Sir B. Walker, and Mr. Cockerell were unavoidably absent.

Mr. T. Lloyd, of the Admiralty, the president of the year, took the chair; and the treasurer, Mr. Mylne, acted as vice-president.

The usual loyal toasts were given, after which the chairman gave the health of "their distinguished guests," associating with it the name of one who had distinguished himself for his engineering works, both civil and military, and whose reputation had gained for him a high scientific position, viz., General Poncelet.—The general expressed his anxious wish to do justice to the toast with which he had been honoured to reply, both for his own countrymen as well as for those distinguished representatives of other nations now present: in doing so he claimed the indulgence of speaking in his own tongue. He was sure he would speak also the feelings of all those who had been drawn together by the stupendous spectacle (the Exhibition) which no nation in ancient or modern times has ever paralleled. England had set them an example by her industrial progress. She had also entered into a solemn engagement with history and posterity to maintain with all her power the happiness and liberty of her people. To the Great Exhibition they, eager for information, and also as lovers of scientific progress, had come to give their tribute of their national productions and the assistance of the judgment, free from all sentiments of exclusive nationality. He thanked the commissioners on the part of the foreign jurists of the Exhibition for the great courtesy and kindness which had been shown them in the execution of their office, the remembrance of which would never be obliterated in their minds. He trusted that the members of the Society of Civil Engineers would allow him, a humble foreign engineer, to express his gratitude and that of his compatriots for the cordial reception they had given them, and for the science, which they not only cultivated for their own kingdom, but for the improvement of other nations. He need only mention the names of the illustrious founders of their society—of Smeaton, Watt, Brindley, Rennie, &c.—the real benefactors of mankind, to recal to them the monuments of genius with which their noble country was enriched, or by which other nations had been prospered, by their being the germ of new discoveries and of that grand and pacific strife which had

caused the happy union of so many scientific persons. If he detained them with mentioning their great engineering works, their docks, tunnels, electric telegraphs, their steam navigation and railways, would they not see that all tended to make of the whole human race one family, animated by the same philanthropic sentiment, the same desire for peace, of good, and true liberty. Should he speak to them of the immense progress the civil engineers of Great Britain had made in manufactures and agriculture, as shown by the multitude of beautiful machines at the Great Exposition; machines to be recommended not only for their ingenuity and variety, but for their perfect construction and mathematical exactitude in all their movements. No, he could not sufficiently explain their admiration of the ingenuity of invention, of what might be called the *chefs d'œuvre* of science, which they had seen collected there. In speaking of these wonders, which would redound to the classical honour of the age in which they lived, and to the English nation, he must beg to record his thanks to a society to which Watt, Faray, Tredgold, and others had contributed the fruits of their laborious inquiries—a society in which practical knowledge was enlightened by true theory. In the name of all the engineers present he had the honour of drinking to the prosperity of the illustrious Smeatonian Society.

Mr. Mylne, as the senior member of the society, replied, and expressed his regret the duty had not devolved on a more able member of the Society. The Society had been formed by Mr. Smeaton for the encouragement of civil engineers, by the introduction of social meetings and friendly intercourse among the members of the Profession, and to wear off those prejudices which too often existed between the members at home, and which acted as a bar to their obtaining knowledge from those of higher attainments abroad. He trusted this object had been attained, and in the name of his fellow associates returned their most cordial thanks for the honour conferred on them.

The Chairman, on giving "The Foreign Scientific Institutions," called upon the distinguished Baron C. Dupin to reply, to which the Baron, in an eloquent and energetic speech in English, remarked, that the Institutions on the continent could not be separated from those of Great Britain, but they of necessity had one great end in view: the advancement of general science, and with it, as one great branch, the unity of theoretical knowledge with practical civil engineering. These have now been united, and never can be separated, the fruits of which have still further to be developed. In speaking of the Royal Society he enumerated several distinguished members, many of whom he had the gratification of meeting on this occasion. He recollected well at a former period meeting with most of the distinguished engineers of that day, at the same festive board, now, alas, no more; viz., James Watt the first, Rennie, and many others. After other interesting allusions, he concluded by proposing "The Royal and other Scientific Societies of Great Britain."

Sir John Herschell, in reply, said—He saw by his side, before and around him, those whose discoveries and labours, and philosophical pursuits, rendered them fit representatives of the societies of Great Britain which had just been proposed. And after alluding to some particular discoveries of Sir David Brewster approaching in importance to those of gravitation, and to the labours of his friend, Dr. Whewell, as a philosopher and hystriographer of science, he proceeded to contrast the spirit of enlightenment and civilisation of the present age with that of the mightiest days of Rome, by referring to the kind of exhibition which the capitol then afforded, with its vast amphitheatre and gladiatorial and other shows, calculated to uncivilise and debase the human mind, with that of the grand display which has now brought to this country the representatives of all nations, which by its crystal-like character, suitably represents the taste of the present day and purity of its objects. All this will do more to lead to the union of